



Technical Memorandum

Date: October 16, 2017

To: Luis Manzo, Jeff Hart (KivIA), Alan Sexton (GeoVector Management Inc.)

From: Neil Hutchinson, Richard Nesbitt, (HESL)

Re: J170084 – AEM Whale Tail Project: Proposed Whale Tail Pit Project Type A Water Licence Framework

This memorandum provides our review comments on the (undated) AEM Document “Proposed Whale Tail Pit Project Type A Water Licence Framework for Water Licence No. 2AM-WTP ----”, for submission to the Nunavut Water Board by the Kivalliq Inuit Association by October 17, 2017.

The Framework is intended to support the Nunavut Water Board and staff in their development of a water licence for the Whale Tail Pit Project. It consists of a table containing Agnico Eagle's comments on potential water licence conditions to proceed with the activities and infrastructure associated with the Whale Tail Pit Project, and Attachment A, containing 5 new conditions proposed to address concerns raised by Indigenous and Northern Affairs Canada (INAC) and Environment and Climate Change Canada (ECCC).

There is significant overlap between the Whale Tail project and the existing Meadowbank Mine (main mine camp, mill and ore processing, tailings storage and disposal) and so the proposed framework uses the current Meadowbank Type A Water Licence as a base and adds certain Whale Tail -specific conditions. The draft framework also incorporates the Haul Road Type B Water Licence. AEM state that *“The draft framework does not present any new information, and reflects information from the [(Whale Tail Project)] Application as well as the current public record.”*

1. Overall, our review concludes that the Framework is sound and addresses the topics necessary to develop the Type A Water Licence for the project. It is appropriate for AEM to maintain those portions of previous licences pertaining to the haul road and the main Meadowbank site, so that the new licence can focus on the additions and changes necessary to accommodate the Whale Tail Project.
2. There would appear to be some confusion regarding receiving environment (CREMP) and internal project monitoring within the Framework. In our experience, the CREMP program monitors the response of the receiving environment downstream of the last point of control. The Framework, however, includes receiving environment stations downstream of the discharge:
 - ST-WT-7, East Diversion Channel,
 - ST-WT-13, Lake A45 at downstream end of diversion channel,
 - ST-WT-14, Lake A16 (Mammoth Lake) Outlet and
 - ST-WT-15, Lake A15.

These stations are monitored for water quality and flow but not for sediment quality or biological parameters; Valued Ecosystem Components that may be impacted as a result of project

activities. They may be included in the CREMP program, however, and therefore need not be included within the framework if they are covered by another program. A review of the proposed CREMP Program (EIS App. 8-E2) shows some overlap of stations and Schedule I of the Framework makes reference to MMER parameters.

Recommendation: It would be useful for reviewers and likely efficient for AEM, if the Water Licence, CREMP and MMER monitoring programs were harmonized to the extent possible during development of the Water Licence. The KivIA will review the monitoring program development with this outcome in mind.

3. Part B.13 – “General Conditions” – the comment column makes reference to “*Attachment A which includes additional details related to the Mercury Monitoring Studies Program, CREMP and Water Quality and Flow Plan*”. Attachment A to the Framework, however, contains commitments to INAC and ECCC and was not provided for review.

Comment: Please provide the Attachment A with “*details related to the Mercury Monitoring Studies Program, CREMP and Water Quality and Flow Plan*”. We presume that the KivIA will be provided the opportunity to comment on these plans as part of the Water Licence development. Part I “*Conditions Applying to General and Aquatic Effects Monitoring*”, Item 2 states “*The updated CREMP shall include all comments provided during the technical review of Application.*”

4. Part F Conditions Applying to Waste Disposal and Management Part 4. States “*The Discharge of Effluent from a Final Discharge Point at Monitoring Program Stations ST-WT-2 shall be demonstrated to be non-Acutely Lethal under the following test and as stipulated in Schedule I of the Licence...*”

Recommendation -This should be amended to include the requirement for sublethal toxicity testing, which is required under MMER (See Schedule I) and should be included as part of this Water Licence.

5. Part I “Conditions Applying to General and Aquatic Effects Monitoring”, Item 23 makes reference to the “*Water Monitoring Reduction Framework*”.

Comment - HESL’s review of AEM’s proposed “Water Monitoring Reduction Framework” concludes that the approach is valid and should be supported, with some modifications, as presented in our memo to the KivIA (Whale Tail Project – Monitoring and Security Reduction – Update, October 11, 2017).

6. Schedule I states that Site ST-WT-10 (Pit Lake) is to be monitored four times per year as the pit fills. HESL recommended additional detail of the Pit Lake monitoring in our October 10 2017 memo to the KIA “Whale Tail Project – Arsenic Specific Terms, Conditions and Commitments – Update”.

Recommendation: The proponent shall confirm that station ST-WT-10 (the Pit Lake as it fills) is located at the centre of the Pit Lake. Water column profiles (temperature, pH, conductivity, dissolved oxygen) shall be collected at each sampling event no less than four times per calendar



year once the pit is 50% full. At each sampling event the proponent shall collect discrete water quality samples from a) the surface of the lake b) half way between the chemocline and the bottom of the lake, and c) within one metre of the pit wall at the bottom if the water column profile indicates the presence of thermal and/or chemical stratification.

HESL concludes that the Framework is sound and addresses the topics necessary to develop the Type A Water Licence for the project, so long as the recommendations and comments presented above are addressed.

We hope this memo meets your current needs. Should you have any questions, please do not hesitate to contact Neil Hutchinson of Hutchinson Environmental Sciences Ltd. (neil.hutchinson@environmentalsciences.ca) or at 705-645-0021 ext. 100.

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